

Art Unit 3677  
Serial No.10/812,614

MAR 13 2007

Reply to Office Action of: 01/04/2007  
Attorney Docket No.: 157972-0011

### REMARKS

In the non-final Office Action mailed on 04JAN07, the examiner correctly noticed that the language of claims 6 and 12 did not clearly correspond to any drawing, and therefore objected to the drawings under 37 CFR §1.83(a). Although applicants have since confirmed that the drawings were not erroneous as filed, the examiner's objection was helpful because it served to identify an inadvertent error in the claims. Applicants have hereby amended claims 6 and 12, and a corresponding paragraph in the written description, to correct the inadvertent error and thereby overcome the objection. No new matter has been added because the amendment to the claims is supported by at least Figs. 5 and 5A, as originally filed.

In the non-final Office Action mailed on 04JAN07, claims 1, 2, and 4 were rejected under 35 U.S.C. §102(b) as being anticipated by US 3,045,264 to Seibert (hereinafter "Seibert"). Applicants hereby traverse these claim rejections because Seibert has no teaching whatsoever of die roll (required by independent claims 1 and 7). For example, Seibert's teachings do not include or leverage any die roll to save the cost of rounding any edges. At least because Seibert does not disclose die roll as required by independent claims 1 and 7, Seibert can not anticipate claims 1, 2, and 4. Therefore Applicants respectfully request that the rejections of claims 1, 2 and 4 be withdrawn.

In the non-final Office Action mailed on 04JAN07, claims 1, 3, 5 and 6 were rejected under 35 U.S.C. §103(a) as being obvious over US 5,383,938 to Rohr (hereinafter "Rohr") in view of US 4,343,581 to Millheiser (hereinafter "Millheiser"). Applicants hereby traverse these claim rejections.

Rohr teaches a locking ring with a chamfer bordering one face of the locking ring. The purpose of the chamfer disclosed by Rohr is "ease of assembly". See Rohr, col. 1, lines 55-60. The chamfer in Rohr functions to facilitate assembly by spreading when pressed. See Rohr, col. 1, lines 34-37. To provide this function and serve Rohr's purpose, the chamfer on edges 33, 34 has a maximum depth at the minimum width as shown in Fig. 4. See Rohr, col. 1, lines 55-60. See also Rohr col. 3 lines 32-33. It is clear from Fig. 4 of Rohr that a double chamfer (i.e. one chamfer bordering each opposing face of the locking ring as taught by Millheiser) would be incompatible with the

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structure, function, and purpose of the chamfer in Rohr. That is, it is clear that the function and purpose of the chamfer in Rohr as cited above and shown in Fig. 4, would be frustrated by a combination with the double bevel teachings of Millheiser.

Millheiser teaches prior art retaining rings with a single bevel for the purpose of minimizing axial looseness or end-play. See Millheiser, col. 1, lines 24-28. Millheiser then explains that such single-bevel designs are not equivalent to prior art double-bevel designs because each type presents different and mutually exclusive problems and advantages so that only one type has been commercially successful. For example, Millheiser explains that single-bevel retaining rings present the problem that they might be inserted backwards during assembly, and therefore might fail to fulfill their retaining purpose. See e.g. Millheiser, col. 1, lines 33-40. See also Millheiser Fig. 3. On the contrary, Millheiser explains that double-bevel retaining rings are not equivalent to single-bevel designs because the double-bevel designs overcome the misassembly problem (but at the cost of inadequate resistance to axial thrust loads and associated lack of commercial success). See e.g. Millheiser, col. 1, lines 44-49. See also Millheiser Fig. 4. See also Millheiser, col. 3, lines 57-59.

Finally, Millheiser discloses a novel double-bevel retaining ring design that purportedly solves the problems associated with earlier double-bevel retaining rings, by (1) matching bevel angle with groove wall angle to eliminate end-play and (2) ensuring that the bevel on one face of the ring is the same as the bevel on the other face to eliminate the potential of backwards insertion during assembly. See, e.g. Millheiser Fig. 7. Clearly, this teaching is incompatible with the teaching of Rohr, because, as shown in Rohr Fig. 4, Rohr depends upon the absence of a matching bevel on the ring's second face, to facilitate a deep bevel on the first face for ease of assembly (as shown in Rohr Fig. 4). Thus, there would be no motivation to modify the Rohr reference to have a double bevel according to Millheiser that would frustrate the intended operation of the invention disclosed in the Rohr reference. For at least this reason, the combination of Rohr and Millheiser can not support a proper prima facie case of obviousness of claims 1, 3, 5 and 6. Applicants therefore request that the rejection of claims 1, 3, 5 and 6 under 35 U.S.C. §103(a) be withdrawn.

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In the non-final Office Action mailed on 04JAN07, claims 7, 8, and 10 were rejected under 35 U.S.C. §103(a) as being obvious over US 6,856,485 to Toh (hereinafter "Toh") in view of Seibert. Applicants hereby traverse these claim rejections. The examiner alleges without citation of authority that there would have been a motivation to combine the teachings of Toh with the teachings of Seibert "because the ring as in Seibert would be easier to manufacture since it is simply formed from a wire stock." However, there is no support whatsoever in the Seibert reference for this assumption about "wire stock." Moreover, the cross sectional view of ring 30 shown in Seibert's Fig. 5 may suggest the contrary (i.e. that the ring 30 may not be formed of a wire stock). Even assuming *arguendo* (and counterfactually) that Seibert included disclosure that ring 30 were formed of a wire stock, such a simple use of a wire stock would teach away from the present disclosure (which is explicitly incompatible with the simple use of a wire stock as a ring because "die roll" is required by all of the presently-pending claims). Thus, there is no motivation to combine the Toh and Seibert references and, for at least this reason, the combination of Toh and Seibert can not support a proper prima facie case of obviousness of claims 7, 8 and 10. Applicants therefore request that the rejection of claims 7, 8 and 10 under 35 U.S.C. §103(a) be withdrawn.

In the non-final Office Action mailed on 04JAN07, claims 7, 9, 11, and 12 were rejected under 35 U.S.C. §103(a) as being obvious over Toh in view of Rohr and Millheiser. Applicants hereby traverse these claim rejections.

First, Applicants already demonstrated (above) that the modification of Rohr with the teachings of Millheiser would render the chamfer of Rohr unsuitable for its intended purpose, and therefore the combination of Rohr and Millheiser can not support any proper prima facie case of obviousness of the pending claims.

Secondly, the examiner alleges without citation of authority that there would have been a motivation to combine the teachings of Toh with the teachings of Rohr and Millheiser in order to improve the ring's connection with the actuator pivot bearing "since the bevel allows for an improved connection as discussed in Rohr." However, the Rohr reference lacks support for this assumption about "an improved connection." In the

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absence of a motive to combine, the combination of Toh, Rohr, and Millheiser can not support a proper prima facie case of obviousness. Applicants therefore request that the rejection of claims 7, 9, 11, and 12 under 35 U.S.C. §103(a) be withdrawn.

Notwithstanding the impropriety of the aforementioned combinations of references as demonstrated above, all of the aforementioned combinations of references fail to disclose the tell-tale slightly rounded cross-sectional profile that one of ordinary skill in the art would consider to be die roll (as required by all pending claims). For this additional reason the rejections of pending claims 1-12 should be withdrawn.

Also notwithstanding the impropriety of the aforementioned combinations of references as demonstrated above, all of the aforementioned combinations of references fail to disclose die roll bordering a first face of a snap ring while a bevel borders a second face (as required by pending claims 3, 5, 6, 9, 11, 12). For this additional reason the rejections claims 3, 5, 6, 9, 11, 12 should be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that pending claims 1-12 are now in condition for allowance and requests reconsideration of the rejections. If a telephone conversation might expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to contact the undersigned attorney at the number listed below.

The Commissioner is hereby authorized to charge payment of any required fees associated with this Communication or credit any overpayment to Deposit Account No. 50-4119.

Respectfully submitted,

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